

## **INTRODUCTION**

This document summarizes the evolving results of the review of potential staging and processing areas which may be considered for different aspects of LPR project.

This summary presented herein should be considered as a “progress” document that will be further evolved, and next phase will take this progress information and continue to evolve it to identify the most promising staging/processing areas and technologies that take into consideration a multitude of factors including but not limited to transportation and logistics, proximity to the LPR study area, proximity to residential areas, property acquisition challenges, etc.

## **STAGING AND PROCESSING AREA REVIEW**

As part of this effort, the initial (primarily desk-top) review included a 79 potential staging and processing areas associated with the LPR-project. The work completed here is part of the ongoing identification and listing of candidate sites which will be ranked into effective groupings with sites receiving higher and/or lower rankings based on size, close proximity, potential for acquisition, infrastructure accessibility, aerial observation, viability of public/private partnership, etc.

The 79 candidate sites were reviewed in accordance with their potential to be associated with various necessary LPR-project construction activities, including: preliminary staging of equipment and material; processing and potential pre-treatment/treatment of dredged material and/or functional use as part of the project dredge material management plan; and, subsequent stockpiling for potential beneficial reuse of the treated material, etc. These 79 sites are listed in Table 1.

It is understood that parallel studies on key elements of the LPR-project will be required to determine the appropriate category and ranking of the potential candidate sites versus each other. This constitutes an iterative process with several cycles of review and revisions to progress the project.

This iteration of the review of potential staging and processing areas therefore focused on the general transportation/operational logistics for each candidate site as listed in Table 1, identifying and completing a site operations logistics review (i.e., access to barge, railroad, truck-ready roadways, and any apparent site restrictions/limitations). Every candidate site based on its respective location was reviewed from the River and/or using aerial photographs to ascertain whether each mode of transportation could be accommodated without too much difficulty and cost.



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## TRANSPORTATION LOGISTICS REVIEW

This Transportation Logistics Review includes investigation into the feasibility and transportation mechanisms for moving treated or untreated dredged material from potential staging/processing facilities to local, regional or remote treatment/storage/disposal (TSD) facilities.

An initial review and survey of sediment transportation logistics was conducted in the vicinity of the LPR study area for the 79 potential staging and processing areas (Table 1), by utilizing publicly available information sources (e.g., online databases, NOAA/DOT maps and charts, street maps, and aerial photographic information). The objective was to compile information to be further distilled into a set of guidelines and utilized to complete a preliminary review of the logistical challenge specifically in conjunction with transportation of sediment/waste to and from 79 potential staging and processing sites.

Several guidelines were developed to evaluate the logistical issues pertaining to each of the potential 79 staging/processing sites (Table 1) and are summarized below.

**Barges and Scows:** Based on a preliminary survey of equipment/vessels used by various dredging operations, the average sizes of equipment available for this type of application were identified and the following vessel dimensions were assumed as part of this review:

| Vessel         | Draft   | Width   | Length    | Height  | Capacity       |
|----------------|---------|---------|-----------|---------|----------------|
| Large Scow     | 12'-14' | 38'-52' | 180'-260' | 16'-20' | 2,000-3,000 cy |
| Small Scow     | 15'-17' | 35'-40' | 100'-150' | 12'-15' | 600-1,000 cy   |
| Large Tug      | 10'-12' | 27'-30' | 90'-110'  | 27'-35' |                |
| Small Push Tug | 4'-6'   | 10'-15' | 20'-35'   | 17'-20' |                |

**Notes:**

1. Water depth information for the LPR study area was obtained from reviews of bathymetric data USACE and others, and from publicly available NOAA charts and maps of the area.
2. Bulkhead and pier information was obtained through visual review of available aerial photographs of the area. Onsite inspections were not conducted as part of this assessment.

**Railroad:** A review of the railroad facilities in and around the LPR study area was conducted for various scenarios for each of the 79 potential sites including: whether and on-site railroad facility was available; whether a spur existed at the site; whether a load-out facility was available; identify the name of the railroad operator (if available); and, proximity of the closest railroad infrastructure. It should be noted that onsite inspections were not conducted as part of this evaluation and Amtrak rail connections were not included as viable rail options at this time due to significant logistics issues associated with mixing freight and passenger service. Notations concerning Amtrak in the comments section of the Table 1 were carried through for future reference.



Roadway/Trucking: A review of the roadway/trucking facilities in and around the LPR study area was conducted for various scenarios for each of the 79 potential sites including: existence or lack of on-site/adjacent-to-site roadways; road types (side road, industrial roadway, residential street, etc.); existing condition of available roadways; state of on-ramps and off-ramps for highways and main roads; proximity to major highways, and likely routes (particularly if the truck route would pass through residential areas). It should be noted that onsite inspections were not conducted as part of this evaluation.

The evaluation of the transportation logistics associated with different modes of transportation associated with each of the 79 potential staging and processing areas is presented in the following paragraphs.

Barge and Water Transportation Considerations: Several factors were evaluated in assessing the water transport considerations including: water depth; scow, barge, and tug maneuverability; height and width of bridges within the waterway and associated opening issues; docking facilities; and, docking site preparation dredging needs.

Barge transportation for both dredge sediment and removed debris may be considered as a highly advantageous method for moving materials from within the LPR study area and to and from potential treatment/processing sites identified at some later stage of the LPR-project. Water transportation mode provides the ease of movement and large capacity loading and is highly advantageous in a sediment removal/dredging scenario. The limitations to barge/scow transportation modes include: bridge logistics (height/width and opening); docking facility issues; and, available water depth issues. An analysis of these limitations indicates that most of them can be managed through relatively minor infrastructure repairs/modifications, proper selection of equipment, and sufficient planning. The following is a list of some of the specific comments and observations made as part of this evaluation:

- **Bridges:** Numerous bridges exist within the actual reach of the River associated with the removal aspects of the project. Several are span bridges with sufficient clearance, therefore were not considered as a factor in this evaluation. Several bridges represent logistical considerations that will need to be further evaluated and dealt with as part of the final design and five of these are discussed below.
  - *Conrail Bridge:* Raritan, N.J. This is a swing bridge with only 125 ft of horizontal clearance and 8 ft of vertical clearance when closed. This bridge will need to be opened for virtually all of the equipment likely to be used for this project except for the smallest support vessels. The bridge appears to be manned, and will open on-signal (as long as a train is not approaching).
  - *Central Railroad of N.J. Bridge:* Passaic, N.J. This is identified as a former swing bridge with 100 ft of horizontal clearance. It appears that the center swing portion of the bridge has been removed when the bridge was abandoned; therefore height is no longer an issue with this bridge. This former bridge represents one of the narrower constrictions for marine equipment within the

LPR study area, and will need to be further evaluated in conjunction with sizing scow, barge, and tug floatation patterns.

- *Point-No-Point Conrail Freight Bridge*: Passaic, N.J. This is identified as a swing bridge with 103 ft of horizontal clearance and 16 ft of vertical clearance when closed. This bridge will need to be opened for virtually all of the equipment likely to be used for the LPR-project, except for the smallest support vessels. This bridge does not appear to be manned except when needed, and requires a 4-hours notice prior to the scheduled opening event.
- *Jackson Street Bridge*: Passaic, N.J. This is a swing bridge with 75 ft of horizontal clearance and 15 ft of vertical clearance when closed. As the lowest bridge in the LPR study area, this bridge will need to be opened for virtually all of the equipment likely to be used for this project except for the smallest support vessels. This bridge does not appear to be manned except when needed, and requires a 4-hours notice prior to the scheduled opening event.
- *Northeast Corridor Amtrak Bridge*: Passaic, N.J. This is a lift bridge with 200 ft of horizontal clearance and 24 ft of vertical clearance when closed. This bridge will need to be opened when tall equipment (such as large tugs) is utilized. This bridge does not appear to be manned except when needed, and requires a 4-hours notice prior to the scheduled opening event.

In general, the bridges within the work area that will require the most significant amount of consideration and coordination are those which are less than 24 ft in height when closed and require a 4-hour notification prior to the scheduled opening event. These include the *Conrail Bridge* in Raritan, the *Point-No-Point Conrail Bridge* in Passaic, and the *Jackson Street Bridge* in Passaic. This information is reproduced under the notes section of Table 1.

- **Water Depth in the Navigation Channel**: Shallower water depths in the upper reaches of the LPR study area do constitute a limitation for some of the larger equipment that might potentially be utilized as part of the LPR-project. Water depths around USACE RM 3.0 may be as low as 7 ft to 8 ft below mean low water (MLW), and therefore may pose an issue for larger scows/barges/tugs. Sequencing dredging of this area (and some other smaller shallow spots) as an early project task within the overall project could alleviate this potential issue. In addition, selection of smaller equipment for access and passage through the identified shallow water areas, and scheduling movement of equipment to take advantage of higher water portions of the tidal cycle, can also be employed to mitigate the depth limitations.
- **Docking Facilities**: Potential staging and processing sites that abut the waterway have obvious advantages for water-borne transportation. Several of the water-side facilities reviewed for this evaluation appear to have existing deep water dock or bulkhead facilities that are operational or could be adapted to become operational. Several other facilities appear to have docking facilities that will either require replacement or repair, and potentially dredging activities to improve the draft at



dockage. In addition, several shore-front properties reviewed that could be utilized as treatment/processing sites do not have adequate existing docking or berthing facilities, and these would need to be constructed along with related dredging for navigational access.

Railroad Considerations: Several factors were evaluated in assessing the rail transport considerations for the LPR-project area in accordance with the above listed guidelines. Railroad access was visually observed by review of available aerial photographs and maps at several of the potential staging and processing sites. Several of the sites evaluated appeared to have relatively good and operational rail access, with either a direct spur to the property, and/or multiple track line sidings.

Roadway Considerations: Several factors were evaluated in assessing the roadway/trucking transport considerations for the LPR-project in accordance with the above listed guidelines. Roadway/trucking access was visually observed by review of available aerial photographs and maps at several of the potential staging and processing sites. Several of the sites evaluated appear to have relatively good and operational on-site roadways and truck accessible facilities with nearby access to major roadways or highways. Several facilities were observed with potential road access issues (e.g., a number of the properties considered are located near or adjacent to residential neighborhoods, etc.) and would require further assessment for alternative road access (i.e., potential construction of additional roadways to the facility).

Further evaluation of transportation logistics would be conducted with development of LPR project objectives as part of the iterative process presented here.

**Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW**

| LOCATION    | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |   | CURRENT LAND USE <sup>1</sup>   |
|-------------|--|-------------------|------------------------------------|------|------|---|---|
|             |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS   |   |
| Bayonne, NJ | 20.4                                       | 2                 | No                                 | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not applicable. Site is located inland on opposite side of road</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway is adjacent to property</li> <li>No loading/unloading facilities onsite</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road onsite</li> <li>Directly adjacent to residential area</li> <li>Close proximity to major Interstate Highway</li> </ul>  | Paved and wooded lot located in industrial area<br><br>Possible Wetlands  |
|             | 56.8                                       | 2                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>May have dockage onsite</li> <li>Deepwater port area appears to be approximately -25 ft MLW</li> <li>Adjacent channel depth is approximately -30 ft MLW</li> <li>Site accessible by scows of all sizes</li> <li>Shoreline appears to be bulkheaded</li> <li>Upstream bridge issues - site is located to the south of all 4 problematic Passaic River bridges</li> <li>No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railroad spur appears to lead to site</li> <li>No visible loading facilities onsite</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads located onsite</li> <li>Site is approximately 4 miles to major Interstate Highway</li> </ul> | Site appears to be an abandoned lot<br><br>Site located adjacent to residential area  |
|             | 16.9                                       | 2                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Deepwater dockage available at the site</li> <li>Adjacent channel depth is approximately -30 ft MLW</li> <li>Shore adjacent to site is bulkheaded</li> <li>Depth at shoreline is approximately -12 ft MLW</li> <li>Upstream bridge issues - site is located to the south of all 4 problematic bridges</li> <li>No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railroad spur appears to lead to site</li> <li>Loading facilities may be present onsite</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads present onsite</li> <li>Site is located approximately 4 miles from major Interstate Highway</li> </ul>  | Site appears to be a vacant lot<br><br>Dirt piles present<br><br>Site is located in a mixed use industrial/ residential area. |
|             | 146.2                                      | 2                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Dockage visible at site</li> <li>Deepwater port area - dockage depths is approximately -20 ft MLW</li> <li>Adjacent channel depth at site is approximately -25 ft MLW</li> <li>Upstream bridge issues - site is located to the south (downstream) of all 4 problematic bridges</li> <li>No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway leads onto site</li> <li>Appears to have loading facilities onsite</li> </ul>  | Site appears to be an active industrial facility  |



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| LOCATION       | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |  | CURRENT LAND USE <sup>1</sup>  |
|----------------|--|-------------------|------------------------------------|------|------|--|--|
|                |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS  |  |
|                |  |                   |                                    |      |      | <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads onsite</li> <li>Site located in industrial area</li> <li>Site located approximately 1 mile from major Interstate Highway</li> </ul>   |  |
| Belleville, NJ | 21.1                                       | 1                 | No                                 | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not Applicable. Site is located across highway</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway runs adjacent to the site</li> <li>No loading facilities apparent onsite</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road leads to site through residential neighborhood</li> <li>Nearest highway ramp is located approximately 1/2 mile from site</li> </ul>   | Adjacent to residential area<br>Half paved/half open vacant lot.                                       |
| Carteret, NJ   | 133.1                                      | 2                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Site is located along Rahway River</li> <li>Dockage is not available at site</li> <li>Only small scows would be able to access site</li> <li>Adjacent channel depth is approximately -10 ft MLW</li> <li>Shoreline is tidal (Exposed at low tide)</li> <li>Dredging and bulkheading would be required to access shoreline</li> <li>Upstream bridge issues - site is located to the south of all 4 problematic bridges</li> <li>No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Site is located approximately 1,500 ft from the nearest railway</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Dirt roads lead onsite</li> <li>Site is located approximately 1.5 miles from major Interstate Highway ramps</li> </ul> | Site is vacant land with wetlands onsite<br>Site located in an industrial area                         |
|                | 49.6                                       | 2                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Deepwater dockage is available at this site</li> <li>Scows of all sizes able to access site</li> <li>Adjacent channel depth is approximately -25 ft MLW</li> <li>Shoreline appears to be rip-rapped.</li> <li>Floating Dockage and piers along shoreline</li> <li>Upstream bridge issues - site is located to the south of all 4 problematic bridges</li> <li>No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Site is located approximately 1,000 ft from the nearest railway.</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads onsite</li> <li>Site is located approximately 2 miles from major Interstate Highway.</li> </ul>  | Site appears to be a vacant industrial lot<br>Several small buildings, silos and man-made ponds onsite |
| Edison, NJ     | 41.6                                       | 2                 | No                                 | No   | No   | <b>Barge</b> <ul style="list-style-type: none"> <li>Not Applicable. Site is located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Nearest railway is approximately more than 1 mile away</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>No visible roads lead to site</li> </ul>   | Site appears to be vacant<br>Possible wetland area   |
| Elizabeth, NJ  | 4.7  | 2                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage onsite</li> </ul>   | Site appears to be a vacant lot  |

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| LOCATION | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |  | CURRENT LAND USE <sup>1</sup>  |
|----------|--|-------------------|------------------------------------|------|------|--|--|
|          |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS  |  |
|          |  |                   |                                    |      |      | <ul style="list-style-type: none"> <li>• Adjacent channel depth is approximately -25 ft MLW</li> <li>• Shore appears to be rip-rapped.</li> <li>• Site may require dredging and bulkheading</li> <li>• Upstream bridge issues – site located downstream of the 4 problematic bridges.</li> <li>• No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>• Nearest railway is located approximately 1/2 mile from site.</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• Paved road is adjacent to the site.</li> <li>• Site is located over 1 mile from major Interstate Highway.</li> </ul>  | <p>Possible public park</p> <p>Site is located in a mixed use industrial/ residential area.</p>                                  |
|          | 2.5  | 2                 | No                                 | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>• Not applicable. Site appears to be inland.</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>• Nearest railway is located approximately 1/2 mile from site.</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• Paved road adjacent to the site</li> <li>• No visible roads onsite</li> <li>• Site is located over 1 mile from major Interstate Highway.</li> </ul>  | <p>Site appears to be a vacant lot</p> <p>Site is located in a mixed use industrial/residential area.</p>                        |
|          | 20.7                                       | 2                 | Yes                                | No   | No   | <b>Barge</b> <ul style="list-style-type: none"> <li>• No dockage visible at site</li> <li>• Channel depth is approximately -25 ft MLW</li> <li>• Shore appears to be tidal (exposed on low tides).</li> <li>• Dredging and bulkheading required</li> <li>• Upstream bridge issues - site is located to the south of all 4 problematic Passaic River bridges.</li> <li>• No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>• Approximately 2500 ft to railway</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• No roads leading to site visible</li> <li>• Approximately 1/2 mile to major Interstate Highway</li> </ul>            | <p>No buildings onsite</p> <p>Site may accept drainage from adjacent lots</p> <p>Possible Wetlands</p>                           |
|          | 111.1                                      | 2                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>• No dockage visible at site</li> <li>• Channel depth is approximately -25 ft MLW</li> <li>• Shore appears to be rip-rapped.</li> <li>• Dredging and bulkheading required</li> <li>• Upstream bridge issues - site is located to the south of all 4 problematic Passaic River bridges.</li> <li>• No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>• Railway is located onsite.</li> <li>• May have facilities onsite</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• Paved road is located onsite.</li> <li>• Approximately 1/4 mile to major Interstate Highway</li> </ul> | <p>Site appears to have an active rail facility</p> <p>Many storage containers onsite</p> <p>Site located in industrial area</p> |
|          | 28.7                                       | 2                 | No                                 | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>• Not applicable. Site is located inland</li> </ul>  | <p>Located in commercial/ industrial area</p>  |



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| LOCATION | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |  | CURRENT LAND USE <sup>1</sup>   |
|----------|--|-------------------|------------------------------------|------|------|--|---|
|          |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS  |   |
|          |  |                   |                                    |      |      | <b>Rail</b> <ul style="list-style-type: none"> <li>• Nearest railways is located approximately 2,000 ft from site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• Paved road leads to site</li> <li>• Dirt road is located onsite</li> <li>• Site in a commercial/industrial area adjacent to Newark Airport</li> <li>• Site is adjacent to onramps to major Interstate Highway</li> </ul>   | Abandoned lot   |
|          | 22.3                                       | 2                 | No                                 | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>• Not applicable. Site located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>• No railroad at site</li> <li>• Nearest railways is located approximately 1,000 ft from site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• Paved roads is adjacent to site</li> <li>• May have paved roads located onsite</li> <li>• Approximately 1/2 mile to major Interstate Highway</li> </ul>  | Site appears to be abandoned<br>Located in industrial area  |
|          | 10.7                                       | 2                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>• Dockage visible onsite</li> <li>• Adjacent channel depths is approximately -25 ft MLW</li> <li>• Shoreline appears to be bulkheaded.</li> <li>• Shoreline depth appears to be approximately -10 ft MLW</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>• Railroad is located onsite; however it may not be useable</li> <li>• Railroad may be elevated as it approaches bridge nearby</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• Paved road onsite</li> <li>• Approximately 1/4 mile to major Interstate Highway</li> </ul>   | Lot within an industrial area<br>Several large buildings located onsite                               |
|          | 9.5  | 2                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>• Dockage may be available onsite</li> <li>• Shoreline appears to be bulkheaded</li> <li>• Shoreline depth is approximately -20 ft MLW</li> <li>• Site accessible by all size scows</li> <li>• Adjacent channel depth is approximately -30 ft MLW</li> <li>• Upstream bridge issues - site is located to the south of all 4 problematic bridges</li> <li>• No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>• Railway is located approximately 1,500 ft away from site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• Paved roads located onsite</li> <li>• 1/4 mile to major Interstate Highway ramps</li> </ul> | Site appears to be active industrial site.<br>Several buildings onsite<br>Site within industrial area |
|          | 24.2                                       | 2                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>• Site is located inland</li> <li>• Site is accessible by small creek adjacent to Newark Bay</li> <li>• Only small scows can access site</li> <li>• Channel depth within creek is unknown, but assumed to be shallow</li> <li>• Dredging and bulkheading in creek area are required</li> <li>• Small bridges over creek may render site unusable for barges</li> </ul>   | Vacant lot in a residential area<br>Several small buildings and a silo onsite                         |

Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW

| LOCATION     | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |   | CURRENT LAND USE <sup>1</sup>  |
|--------------|--|-------------------|------------------------------------|------|------|---|--|
|              |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS   |  |
|              |  |                   |                                    |      |      | <b>Rail</b> <ul style="list-style-type: none"> <li>• Railway is located adjacent to the site</li> <li>• No visible loading facilities located onsite</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• Paved road is located onsite</li> <li>• Approximately 1/2 mile to major Interstate Highway onramp</li> </ul>   |  |
|              | 20.1                                       | 2                 | No                                 | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>• Not Applicable. Site is located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>• Railway is adjacent to site</li> <li>• No loading facilities visible at site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• Paved road located onsite</li> <li>• Site is located adjacent to major Interstate Highway ramps</li> </ul>  | Site apparently vacant lot<br>Several large buildings located onsite<br>Site is located within an industrial area. |
| Harrison, NJ | 31.0                                       | 1                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>• No visible dockage onsite</li> <li>• Adjacent channel depth is approximately -17 ft MLW</li> <li>• Adjacent shore depth is tidal (exposed at low tide)</li> <li>• Dredging and bulkheading required</li> <li>• Site downstream of swing bridge and railroad bridge with 24 ft clearance</li> <li>• Site upstream of railroad bridges</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>• Rail way is adjacent to site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• Paved road leads to site</li> <li>• Site is located approximately 1 mile from major Interstate Highway</li> </ul>   | Some development<br>Mostly vacant with few small buildings or containers<br>Located in Industrial area             |
|              | 34.7                                       | 1                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>• No visible dockage at site</li> <li>• Adjacent channel depth approximately -17 ft MLW</li> <li>• Adjacent shore depth is tidal (exposed at low tide)</li> <li>• Dredging and bulkheading required</li> <li>• Downstream bridge issues</li> <li>• Upstream bridge issues</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>• Site is located adjacent to railway</li> <li>• No loading facilities visible near site</li> <li>• Railway is located over 1,000 ft from site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• Paved road leads to site</li> <li>• Approximately 1 mile to nearest highway ramp (major Interstate Highway)</li> </ul> | Industrial area<br>Some development<br>Mostly vacant with several buildings onsite                                 |
|              | 5.5  | 1                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>• Channel depth is approximately -17 ft MLW</li> <li>• Shore depth is approximately -2 ft MLW</li> <li>• Large scow accessible</li> <li>• No existing dockage</li> <li>• Bulkhead will need to be constructed</li> <li>• No upstream bridge issues</li> </ul>   | Partial of site is vacant land.<br>Small factory with crane and storage containers.                                |
|              |  |                   |                                    |      |      |   |  |



**Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW**

| LOCATION        | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |   | CURRENT LAND USE <sup>1</sup>   |
|-----------------|--|-------------------|------------------------------------|------|------|---|---|
|                 |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS   |   |
|                 |  |                   |                                    |      |      | <ul style="list-style-type: none"> <li>Downstream bridge issues</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Closest rail is located approximately 1/2 mile away</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>On industrial roadway</li> <li>Approximately Less than 1/2 mile to major Interstate Highway</li> </ul>  |   |
|                 | 7.1  | I                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage onsite</li> <li>Adjacent channel depth is approximately -7 ft MLW</li> <li>Adjacent shore depth may be bulkheaded</li> <li>No upstream bridge issues</li> <li>Downstream bridge issues</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>No railway is located at the site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road leads to site</li> <li>Site is located approximately 1/2 mile from major Interstate Highway</li> </ul>   | Industrial Area<br><br>Vacant lot<br><br>Partial use on lot for storage containers and cars           |
|                 | 33.0                                       | I                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage onsite</li> <li>Adjacent channel depth is approximately -17 ft MLW</li> <li>Adjacent shore depth is tidal (exposed at low tide)</li> <li>Dredging and bulkheading required</li> <li>Site downstream of a bridge/railroad Bridge with 24 ft clearance</li> <li>Site upstream of a railroad bridge</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>No railroad is located at the site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road leads to site</li> <li>Site is located approximately 1 mile from major Interstate Highway</li> </ul>  | Industrial area<br><br>Vacant lot with one large building onsite                                      |
| Jersey City, NJ | 86.2                                       | I                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage</li> <li>Adjacent channel depth is approximately -25 ft MLW</li> <li>Shoreline is tidal (exposed at low tide)</li> <li>Dredging and bulkheading will be required</li> <li>Upstream bridge issues - Site is located on the Hackensack River - Site is downstream of the 4 problematic bridges</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Site located approximately 1/2 mile from the nearest railway</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads adjacent to site</li> <li>Dirt roads lead to site</li> <li>Approximately 1 mile to major Interstate Highway</li> </ul> | Open lot<br><br>Possible wetland<br><br>No buildings onsite<br><br>Mixed Industrial/Residential area  |
|                 | 30.5                                       | I                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage onsite</li> <li>Site accessible to all scow sizes</li> <li>Channel depth is approximately -25 ft MLW</li> <li>Shoreline appears to be bulkheaded</li> </ul>  | Vacant lot in mixed-use area<br><br>Several buildings onsite<br><br>Site adjacent to residential area |

Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW

| LOCATION   | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |  | CURRENT LAND USE <sup>1</sup>   |
|------------|--|-------------------|------------------------------------|------|------|--|---|
|            |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS  |   |
|            |  |                   |                                    |      |      | <ul style="list-style-type: none"> <li>Shoreline depth is approximately -4 ft MLW</li> <li>Upstream bridge issues - Site is located downstream of the 4 problematic (low clearance) Passaic River Bridges</li> <li>Downstream bridge issues – No bridge issues downstream of the site</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Terminus of abandoned Railroad approximately 3/4 mile away from site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads onsite</li> <li>Approximately 1.5 miles to major Interstate Highway</li> </ul>  |   |
|            | 39.6                                       | 1                 | No                                 | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not Applicable Site is located inland next to marsh</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Rail facility is located immediately adjacent to site</li> <li>Loading facilities available on adjacent property</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road is adjacent to site</li> </ul>   | Located in Industrial area<br>Possible Wetlands                                     |
|            | 21.5                                       | 2                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No dockage visible</li> <li>Adjacent channel depth is approximately -25 ft MLW</li> <li>Shoreline may be bulkheaded</li> <li>Shoreline depth appears to be approximately -14 ft MLW</li> <li>Site is located near many bridges</li> <li>Downstream of Project Bridges; however, other rail bridges located in close proximity</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Rail lines adjacent to site to the North and to the South</li> <li>No visible rail facilities</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road leads to site</li> <li>Nearest highway within 1/2 mile</li> </ul> | Site located in heavy industrial area<br>Vacant lot                                 |
| Kearny, NJ | 207.4                                      | 1                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No dockage visible</li> <li>Site is located near many bridges</li> <li>Shoreline may need dredging and bulkheading</li> <li>Shoreline depth appears to be approximately -4 ft MLW</li> <li>Downstream of Project Bridges; however, other rail bridges located in close proximity</li> <li>Adjacent channel depth is approximately -25 ft MLW</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway is adjacent to site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road leads to site</li> <li>Nearest highway within 1/2 mile</li> </ul>  | Heavy industrial usage<br>Vacant Industrial   |
|            | 10.8                                       | 1                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Visible deepwater dockage onsite</li> <li>Adjacent channel depth is approximately -25 ft MLW</li> <li>Shoreline appears to be bulkheaded</li> <li>Upstream Bridge Issues - Site is located on the Hackensack River. Site is downstream of the 4 problematic Passaic River bridges</li> </ul>   | Active industrial area<br>One large building and multiple storage containers onsite |



Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW

| LOCATION | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |   | CURRENT LAND USE <sup>1</sup>   |
|----------|--|-------------------|------------------------------------|------|------|---|---|
|          |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS   |   |
|          |  |                   |                                    |      |      | <b>Rail</b> <ul style="list-style-type: none"> <li>Site located approximately 1/2 mile from railway</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads onsite</li> <li>Approximately 1 mile to major Interstate Highway</li> </ul>   |   |
|          | 39.9                                       | I                 | No                                 | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Waterfront access is obstructed by a local road</li> <li>Site is very close to the shore of Hackensack R. Barging may be applicable</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway is located onsite</li> <li>Storage containers visible – possibly mixed use railroad</li> <li>Loading facilities may be available</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road leads to site</li> <li>Nearest highway within 1/2 mile</li> </ul> | Heavy Industrial Usage<br>Vacant Lot but partially used<br>Appears close to wetlands<br>Site is Brownfield site |
|          | 88.3                                       | I                 | No                                 | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not Applicable. Site is located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway is located approximately 250 ft to the south of site</li> <li>Railway is accessible only by crossing roadway and drainage area</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Dirt road leads to site</li> <li>Major Interstate Highway ramp located approximately 250 ft away</li> </ul>   | Vacant lot<br>One small building onsite<br>Site is located within an industrial area                            |
|          | 42.7                                       | I                 | No                                 | No   | No   | <b>Barge</b> <ul style="list-style-type: none"> <li>Not applicable. Site located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway is located approximately 500 ft offsite</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>No visible roads lead to site</li> <li>Site located within loop of highway cloverleaf</li> </ul>  | Site is vacant lot adjacent to wetlands   |
|          | 40.0                                       | I                 | No                                 | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not applicable. Site is located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Rail line (Conrail) is adjacent to site</li> <li>No visible loading facilities near site</li> <li>Rail is approximately 100 ft from site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Dirt road leads to site</li> <li>Site is located within 1/2 mile of two major Interstate Highways</li> </ul>  | Vacant lot<br>Appears to be old landfill<br>Located in Industrial area  |
|          | 12.9                                       | I                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Suitable for large scows</li> <li>Bulkhead apparent – may need repair</li> <li>Channel depth is approximately -22 ft MLW</li> <li>Some dredging needed next to bulkhead</li> <li>Downstream – railroad bridge</li> <li>Upstream – swing bridges notification required.</li> </ul> <b>Rail</b>   | Partially vacant/ open Space with several buildings   |

Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW

| LOCATION | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |  | CURRENT LAND USE <sup>1</sup>  |
|----------|--|-------------------|------------------------------------|------|------|--|--|
|          |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS  |  |
|          |  |                   |                                    |      |      | <ul style="list-style-type: none"> <li>Closest rail approximately 1/2 mile</li> </ul>  |  |
|          | 26.3                                       | I                 | No                                 | No   | Yes  | <ul style="list-style-type: none"> <li>Not applicable. Site is located inland</li> <li>Nearest railroad is located more than 1,000 ft away</li> <li>No loading facilities adjacent to site</li> <li>Paved road leads to site</li> <li>Site is located approximately 1/2 mile highway</li> </ul>  | Partially vacant industrial lot<br>Silo building located onsite                        |
|          | 16.9                                       | I                 | No                                 | No   | Yes  | <ul style="list-style-type: none"> <li>Not Applicable. Site is located inland</li> <li>Railway is located approximately 500 ft to the south</li> <li>Paved road leads to site</li> <li>Site is located within 500 ft of major Interstate Highway cloverleaf</li> </ul>   | Site is vacant<br>Approximately half of lot appears paved<br>Industrial area           |
|          | 21.0                                       | I                 | No                                 | No   | Yes  | <ul style="list-style-type: none"> <li>Not Applicable. Site is located inland</li> <li>Railway is located approximately 500 ft to the south</li> <li>Dirt road leads to site</li> <li>Site is located near major Interstate Highway</li> </ul>   | Site appears vacant and abandoned<br>Industrial area                                   |
|          | 39.5                                       | I                 | Yes                                | No   | Yes  | <ul style="list-style-type: none"> <li>No dockage visible</li> <li>Adjacent channel depth is approximately -17 ft MLW</li> <li>Site is located at the confluence of the Hackensack and Passaic Rivers</li> <li>Shoreline appears tidal (may be exposed at low tide)</li> <li>Dredging and bulkheading may be required</li> <li>Upstream bridge Issues - Site is located downstream of the 4 problematic (low clearance) Passaic River Bridges</li> <li>Downstream Bridge Issues – No bridge issues downstream of the site</li> <li>Nearest railroad is located over 1 mile from site</li> <li>Dirt road is onsite</li> </ul> | Some development<br>Small buildings onsite<br>Industrial area                          |
|          | 136.4                                      | I                 | No                                 | Yes  | Yes  | <ul style="list-style-type: none"> <li>Not applicable. Site is located near inland pond</li> <li>Railway runs through site</li> <li>No visible loading facilities</li> <li>Dirt road is located onsite</li> </ul>  | Vacant space adjacent to wetland<br>Site is located close to residential neighborhoods |

**Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW**

| LOCATION   | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |   | CURRENT LAND USE <sup>1</sup>   |
|------------|--|-------------------|------------------------------------|------|------|---|---|
|            |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS   |   |
|            |  |                   |                                    |      |      | <ul style="list-style-type: none"> <li>Site is located in proximity (250 ft) of major Interstate Highway</li> </ul>   |   |
|            | 22.2                                       | 1                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage onsite</li> <li>Adjacent channel depth is approximately -12 ft MLW</li> <li>Shoreline appears to be bulkheaded</li> <li>Shoreline depth appears to be approximately -2 ft MLW</li> <li>Dredging may be required along shoreline</li> <li>Upstream bridge issues</li> <li>Downstream Bridge Issues</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Not applicable. Nearest railway is located approximately 2,000 ft away</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road leads to site</li> <li>Approximately 500 ft to major Interstate Highway onramps</li> </ul> | Vacant industrial lot<br><br>One large building onsite  |
|            | 16.1                                       | 1                 | No                                 | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not Applicable. Site is adjacent to small creek and land-locked pond</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway is adjacent to the site</li> <li>No visible loading facilities</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road leads to site</li> <li>Over 1 mile to nearest highway</li> </ul>   | Some development<br><br>Large existing building onsite<br><br>Located in Industrial area<br><br>Adjacent to wetland |
|            | 19.4                                       | 1                 | No                                 | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not applicable. Site is located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Nearest railroad is located approximately over 1 mile away</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads onsite</li> <li>Nearest highway (major Interstate Highway) approximately 1 mile away</li> </ul>   | Industrial area<br><br>Active industrial lot  |
|            | 8.5  | 1                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage onsite</li> <li>Adjacent channel depth is -25 ft MLW</li> <li>Shoreline appears to be bulkheaded</li> <li>Upstream bridge issues - Site is located on the Hackensack River. Site is downstream of the 4 problematic Passaic River bridges</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Site is located approximately 1/2 mile from the railway</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads onsite</li> <li>Approximately 1 mile to major Interstate Highway</li> </ul>  | Vacant industrial lot   |
| Linden, NJ | 119.2                                      | 2                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Dockage available at site</li> <li>Site accessible to scows of all sizes</li> <li>Adjacent channel depth is approximately -25 ft MLW</li> <li>Shoreline is bulkheaded with a depth of approximately -7 ft MLW</li> <li>Upstream bridge issues - site is located to the south of all 4 problematic bridges</li> </ul>  | Site is a vacant industrial lot<br><br>Multiple small buildings and silos onsite                                    |



Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW

| LOCATION | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |  | CURRENT LAND USE <sup>1</sup>   |
|----------|--|-------------------|------------------------------------|------|------|--|---|
|          |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS  |   |
|          |  |                   |                                    |      |      | <ul style="list-style-type: none"> <li>No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway is approximately 2,000 ft away from site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads are present onsite</li> <li>Site is located approximately 1 mile from major Interstate Highway</li> </ul>   |   |
|          | 150.5                                      | 2                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Deepwater dockage available at site</li> <li>Site accessible to scows of all sizes</li> <li>Adjacent channel depth is approximately -30 ft MLW</li> <li>Shoreline is bulkheaded with a depth of approximately -7 ft MLW</li> <li>Upstream bridge issues - site is located to the south of all 4 problematic bridges</li> <li>No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>A RR spur may be present onsite</li> <li>Loading facilities may be present onsite</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads present onsite</li> <li>Site is located 1/2 mile from major Interstate Highway ramp</li> </ul> | Site appears to be active industrial site<br><br>Multiple buildings, silos and man-made ponds onsite<br><br>Possible Wetlands onsite<br><br>Site is located within an industrial area |
|          | 171.8                                      | 2                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Deepwater dockage available at site</li> <li>Site accessible to scows of all sizes</li> <li>Adjacent channel depth is approximately -25 ft MLW</li> <li>Shoreline is bulkheaded with approximate depth of -2 ft MLW</li> <li>Upstream bridge issues - site is located to the south of all 4 problematic bridges</li> <li>No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railroad spur may run onsite</li> <li>Loading facility may be available onsite</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads present onsite</li> <li>Site is located approximately 1 mile from major Interstate Highway</li> </ul> | Site is a partially vacant industrial site<br><br>Multiple buildings, factories, silos and ponds onsite<br><br>Possible Wetlands onsite   |
|          | 24.2                                       | 2                 | No                                 | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not applicable. Site located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway is adjacent to site</li> <li>No visible loading facilities located onsite</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads onsite</li> <li>Approximately 1 mile to major Interstate Highway</li> </ul>  | Vacant lot in industrial area<br><br>Small buildings and wooded areas onsite<br><br>Site is in close proximity to a Municipal Airport   |
|          | 140.0                                      | 2                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Site is located along Rahway River</li> <li>Dockage is not available at site</li> <li>Only small scows would be able to access site</li> <li>Adjacent channel depths -10 ft MLW</li> <li>Shoreline is tidal (Exposed at low tide)</li> <li>Dredging and bulkheading would be required to access shoreline</li> </ul>   | Site is a possible open wetland area<br><br>Site located within an industrial area  |

**Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW**

| LOCATION   | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |   | CURRENT LAND USE <sup>1</sup>   |
|------------|--|-------------------|------------------------------------|------|------|---|---|
|            |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS   |   |
|            |  |                   |                                    |      |      | <ul style="list-style-type: none"> <li>Upstream bridge issues - site is located to the south of all 4 problematic bridges</li> <li>No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway is adjacent to site</li> <li>No facilities visible at the site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Dirt roads lead to the site</li> <li>Site is located approximately 1 mile from major Interstate Highway</li> </ul>   |   |
|            | 29.6                                       | 2                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Deepwater dockage is available at this site</li> <li>Scows of all sizes able to access site</li> <li>Adjacent channel depths -25 ft MLW</li> <li>Shoreline is bulkheaded with a depth of -5 ft MLW</li> <li>Upstream bridge issues - site is located to the south of all 4 problematic bridges</li> <li>No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Site is located approximately 1/2 mile from the nearest railway</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads onsite</li> <li>Site is located approximately 3 miles from major Interstate Highway</li> </ul> | Site is a vacant industrial lot<br>Several large buildings onsite                   |
| Newark, NJ | 2.8  | 1                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage</li> <li>Large scows can access site</li> <li>Adjacent channel depth is approximately -17 ft MLW</li> <li>Shore depth appears to be approximately -2 ft MLW</li> <li>Dredging and bulkheading may be required</li> <li>No upstream bridge issues</li> <li>Downstream bridge issues</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Not adjacent to rail</li> <li>Nearest railway is located approximately 1/4 mile away</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Road leads to site through industrial area</li> <li>Approximately 1,000 ft to major Interstate Highway</li> </ul>                | Vacant lot  |
|            | 18.3                                       | 1                 | No                                 | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not Applicable. Site is located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Nearest railway is located approximately 200 ft away on other side of highway</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Dirt roads leading to site</li> <li>Adjacent to major Interstate Highway on ramps</li> </ul>   | Vacant lot in industrial area   |
|            | 19.3                                       | 1                 | No                                 | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not applicable. Site is located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Site is located approximately 500 ft from a railroad terminus</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Dirt roads lead onsite</li> </ul>  | Industrial area<br>Vacant lot with storage containers<br>Located in industrial area |
|            |  |                   |                                    |      |      |   |   |

**Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW**

| LOCATION | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |   | CURRENT LAND USE <sup>1</sup>  |
|----------|--|-------------------|------------------------------------|------|------|---|--|
|          |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS   |  |
|          |  |                   |                                    |      |      | <ul style="list-style-type: none"> <li>Site is approximately 3/4 mile from the nearest major Interstate Highway onramps</li> </ul>  |  |
|          | 8.4  | 1                 | No                                 | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not Applicable. Site is located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Site is located approximately 1,000 ft from Railroad terminus</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Dirt road leads to site</li> <li>Site is approximately 3/4 mile from the nearest major Interstate Highway onramps</li> </ul>   | Vacant lot with numerous storage containers<br><br>Industrial area   |
|          | 2.8  | 1                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage onsite</li> <li>Adjacent channel depth is approximately -7 ft MLW</li> <li>Adjacent shore depth is tidal (exposed at low tide)</li> <li>Dredging and bulkheading required</li> <li>No upstream bridge issues</li> <li>Downstream bridge issues</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Nearest railroad is located over 1 mile from site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>No visible roads lead into site</li> <li>Site is adjacent to 4-lane street</li> <li>Approximately 1/2 mile to major Interstate Highway</li> </ul> | Site is located near dense commercial area with many tall office buildings<br><br>Vacant lot               |
|          | 41.4                                       | 1                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage</li> <li>Adjacent channel depth is approximately 17 ft MLW</li> <li>Adjacent shore depth appears tidal (exposed at low tide)</li> <li>Dredging and bulkheading required</li> <li>Upstream Issues</li> <li>Downstream Issues</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway runs adjacent to site</li> <li>No loading facilities visible</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road leads into site</li> <li>Approximately 1,000 ft to major Interstate Highway</li> </ul>   | Vacant Industrial Lot<br><br>Three large buildings onsite<br><br>Site appears to have some recent activity |
|          | 30.5                                       | 1                 | No                                 | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not applicable. Site is located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Site is located approximately 1,000 ft from railroad</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Dirt roads lead to site</li> <li>Site is approximately 1/4 mile from the nearest major Interstate Highway onramps</li> </ul>  | Vacant lot with many storage containers<br><br>Industrial area   |
|          | 5.7  | 1                 | No                                 | Yes  | No   | <b>Barge</b> <ul style="list-style-type: none"> <li>Not Applicable. Site is located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Site is located adjacent to railway</li> <li>No visible loading/unloading facilities</li> </ul>  | Abandoned Industrial lot   |



Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW

| LOCATION | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |  | CURRENT LAND USE <sup>1</sup>  |
|----------|--|-------------------|------------------------------------|------|------|--|--|
|          |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS  |  |
|          |  |                   |                                    |      |      | <b>Road</b> <ul style="list-style-type: none"> <li>No visible road leads to site</li> </ul>  |  |
|          | 9.9  | I                 | Yes                                | Yes  | No   | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage at site</li> <li>Adjacent channel depth is approximately 7 ft MLW</li> <li>Adjacent shore depth is tidal (exposed at low tide)</li> <li>Dredging and bulkheading required</li> <li>Suitable for small scows</li> <li>Downstream bridge issues</li> <li>Upstream Bridge Issues</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Site is adjacent to railroad</li> <li>No visible loading facilities</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>No visible road leads to site</li> <li>Site located near major Interstate Highway</li> </ul>  | Abandoned land   |
|          | 7.5  | I                 | No                                 | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Site is located cross highway from river</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railroad is adjacent to site</li> <li>No apparent loading facilities</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Mixed use road leads to site</li> <li>Highway access is located within 1/2 mile of site</li> </ul>   | Majority of site area is unpaved open lot<br>Site is located near residential neighborhood                       |
|          | 14.8                                       | I                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage at site</li> <li>Site accessible to all scow sizes</li> <li>Channel depth is approximately -25 ft MLW</li> <li>Shore depth approximately -10 ft MLW</li> <li>Shoreline may be bulkheaded</li> <li>Upstream bridge issues - Site is located downstream of the 4 problematic (low clearance) Passaic River Bridges</li> <li>Downstream bridge issues – No bridge issues downstream of the site</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Nearest railway approximately 1,500 ft away</li> <li>No apparent loading facilities</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads lead to site</li> <li>Approximately 2 miles to major Interstate Highway</li> </ul> | Partially vacant lot in industrial area<br>Several small buildings on site<br>Site is located in industrial area |
|          | 38.2                                       | I                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage at site</li> <li>Site accessible to all scow sizes</li> <li>Channel depth is approximately -25 ft MLW</li> <li>Shoreline appears tidal (May be exposed at low tide)</li> <li>Dredging and bulkheading may be required</li> <li>An out-parcel of the site is located across roadway</li> </ul>   | Abandoned lot in industrial area<br>May be wetland areas onsite  |

Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW

| LOCATION | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |  | CURRENT LAND USE <sup>1</sup>   |
|----------|--|-------------------|------------------------------------|------|------|--|---|
|          |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS  |   |
|          |  |                   |                                    |      |      | <b>Rail</b> <ul style="list-style-type: none"> <li>Railway is adjacent to site</li> <li>No loading / unloading facilities visible at site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads adjacent to site</li> <li>Dirt roads lead into the project site</li> <li>Approximately 2 miles to major Interstate Highway</li> </ul>  |   |
|          | 11.0                                       | I                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage at site</li> <li>Site accessible to all scow sizes</li> <li>Channel depth is approximately -25 ft MLW</li> <li>Shoreline appears tidal (May be exposed at low tide)</li> <li>Dredging and bulkheading may be required</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway is approximately 200 ft from site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads lead to site</li> <li>Approximately 2 miles to major Interstate Highway</li> </ul>  | Vacant wooded lot in industrial area<br><br>May be wetland areas onsite<br><br>Site is located in industrial area |
|          | 16.6                                       | I                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Dockage not visible</li> <li>Channel depth is approximately -17 ft MLW</li> <li>Shoreline may be bulkheaded</li> <li>Site downstream of swing bridge and railroad bridge with 24 ft clearance</li> <li>Site upstream of several bridges</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>No railroad at site</li> <li>Nearest railroad is located approximately 1/2 mile away</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road leads into site</li> <li>Located in commercial area</li> <li>Approximately 1 mile to major Interstate Highway</li> </ul> |   |
|          | 15.4                                       | I                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage onsite</li> <li>Adjacent channel depth is approximately -12 ft MLW</li> <li>Shoreline appears to be bulkheaded</li> <li>Dredging required along shoreline</li> <li>Upstream Bridge Issues</li> <li>Downstream Bridge Issues</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Not Applicable. Nearest railway is located approximately 1,000 ft away</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road leads to site</li> <li>Near major Interstate Highway</li> </ul>   | Active industrial site<br><br>Several buildings onsite  |
|          | 4.5  | I                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage onsite</li> <li>Adjacent channel depth is approximately -7 ft MLW</li> <li>Adjacent shore depth is tidal (exposed at low tide)</li> </ul>   | Commercial area<br><br>Vacant lot   |

Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW

| LOCATION | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |   | CURRENT LAND USE <sup>1</sup>   |
|----------|--|-------------------|------------------------------------|------|------|---|---|
|          |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS   |   |
|          |  |                   |                                    |      |      | <ul style="list-style-type: none"> <li>Dredging and bulkheading required</li> <li>No upstream bridge issues</li> <li>Downstream bridge issues</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>No railway is located near the site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>No visible road leads to site</li> <li>Site is located near toll office buildings/commercial area</li> <li>Site is adjacent to 4-lane street</li> <li>Approximately 3/4 mile to major Interstate Highway</li> </ul>   | Site is paved   |
|          | 2.7  | I                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage onsite</li> <li>Adjacent channel depth is approximately -17 ft MLW</li> <li>Adjacent shore may be bulkheaded</li> <li>Downstream bridge issues</li> <li>Upstream bridge issues</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>No railway is located near the site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road may lead into site</li> <li>Site adjacent to 4 lane street</li> <li>Approximately 1 mile to major Interstate Highway</li> </ul>  | Some development<br>Appears vacant<br>Site adjacent to residential neighborhood |
|          | 5.8  | I                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage onsite</li> <li>Adjacent channel depth is approximately -17 ft MLW</li> <li>Adjacent shore may be bulkheaded</li> <li>Adjacent shore depth appears to be approximately -2 ft MLW</li> <li>Site downstream of swing bridge and railroad bridge with 24 ft clearance</li> <li>Site upstream of railroad bridges</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>No railway is located near the site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved road may lead into site</li> <li>Site adjacent to 4 lane street</li> <li>Approximately 1.5 mile to major Interstate Highway</li> <li>Approximately 3/4 mile to major Interstate Highway</li> </ul> | Mixed use area<br>Some commercial development<br>Mostly paved site              |
|          | 42.4                                       | I                 | No                                 | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not Applicable. Site is located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Rail line runs adjacent to site</li> <li>No visible loading facilities onsite</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads lead onto site</li> <li>Adjacent to major Interstate Highway</li> <li>Approximately 1/2 mile from nearest onramp</li> </ul>  | Vacant lot<br>No structures visible<br>Industrial area                          |
|          | 10.1                                       | I                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage</li> </ul>   | Vacant lot  |



Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW

| LOCATION        | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |   | CURRENT LAND USE <sup>1</sup>   |
|-----------------|--|-------------------|------------------------------------|------|------|---|---|
|                 |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS   |   |
|                 |  |                   |                                    |      |      | <ul style="list-style-type: none"> <li>Limited access to shore</li> <li>Adjacent shoreline may be tidal (exposed on low tides)</li> <li>Site downstream of swing bridge and railroad bridge with 24 ft clearance</li> <li>Site upstream of railroad bridges</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Not applicable. Nearest rail line is approximately 1,500 ft away</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads run to site</li> <li>Approximately 1/2 mile to major Interstate Highway</li> </ul>   | One medium sized building located onsite<br><br>Located in commercial and industrial area   |
| Nutley, NJ      | 5.7  | 2                 | No                                 | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No dockage currently at site</li> <li>Only small scows can access site</li> <li>Site is located adjacent to a Creek</li> <li>Upstream of all bridges</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Nearest railway is located approximately 1/4 mile south</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Only visible road leads through a neighboring business</li> <li>Approximately 1 mile to major Interstate Highway onramp</li> </ul>   | Partially vacant/ open space<br><br>Located in mixed use area   |
| Perth Amboy, NJ | 215.4                                      | 2                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Dockage available at this site</li> <li>Scows of all sizes able to access site</li> <li>Adjacent channel depth is approximately -30 ft MLW</li> <li>Half of shoreline appears to be tidal (shoreline exposed on low tides)</li> <li>Half of shoreline appears rip-rapped</li> <li>Dredging and bulkheading might be required along portions of shoreline</li> <li>Upstream bridge issues - site is located to the south of all 4 problematic bridges</li> <li>No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway is approximately 500 ft away</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads onsite</li> <li>Site is located approximately 1 mile from major Interstate Highway ramps</li> </ul> | Site appears to be an active industrial site<br><br>Many buildings and containers noted onsite<br><br>Portions of the property are wooded<br><br>Site located in industrial area, but near a residential area |
|                 | 73.3                                       | 2                 | No                                 | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not Applicable. Site located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Site is approximately 1,000 ft from railway.</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads onsite</li> <li>Site is approximately 1 mile to major Interstate Highway</li> </ul>  | Site appears to be an abandoned industrial site<br><br>Silos, foundations and beams onsite<br><br>Portions of the site are wooded<br><br>Adjacent to residential area   |
| South Amboy, NJ | 45.7                                       | 2                 | Yes                                | Yes  | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage available at this site</li> <li>Scows of all sizes potentially able to access site</li> <li>Adjacent channel depth is approximately -20 ft MLW</li> <li>Shoreline appears to be tidal (Exposed on low tides)</li> <li>Dredging and bulkheading may be required</li> </ul>  | Site is a vacant wooded lot<br><br>Site located within an industrial area<br><br>Site is situated next to a residential area  |

**Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW**

| LOCATION          | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |   | CURRENT LAND USE <sup>1</sup>  |
|-------------------|--|-------------------|------------------------------------|------|------|---|--|
|                   |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS   |  |
|                   |  |                   |                                    |      |      | <ul style="list-style-type: none"> <li>Upstream bridge issues - site is located to the south of all 4 problematic bridges</li> <li>Downstream bridge issues</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Railway is adjacent to the site</li> <li>No visible loading facilities at the site</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads adjacent to the site</li> <li>Dirt roads located onsite</li> <li>Site is located approximately 1/2 miles from highway</li> </ul>   | Possible wetland issues  |
| Staten Island, NY | 11.2                                       | 2                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>No visible dockage located at the site</li> <li>Adjacent channel depth is approximately -30 ft MLW</li> <li>Adjacent shore depth is tidal (exposed at low tide)</li> <li>Dredging and bulkheading may be required</li> <li>Upstream bridge issues - site is located to the south of all 4 problematic bridges</li> <li>No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Approximately 1,000 ft to nearest railway</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads lead to site</li> <li>Paved roads onsite</li> <li>Approximately 3.5 miles to major Interstate Highway</li> </ul>                                      | Site appears to be paved vacant lot<br>Site is adjacent to residential area    |
|                   | 7.8  | 2                 | No                                 | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Not applicable. Site is located inland</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Approximately 1,000 ft to nearest railway</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads adjacent to the site</li> <li>No roads visible onsite</li> <li>Site is adjacent to residential area</li> <li>Approximately 3.5 miles to major Interstate Highway</li> </ul>  | Site appears to be a vacant wooded lot   |
|                   | 14.3                                       | 2                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Appears to have dockage onsite</li> <li>Adjacent channel depth is approximately -25 ft MLW</li> <li>Scows of all sizes can access site, if shoreline is dredged</li> <li>Shore appears tidal (shoreline exposed at low tide)</li> <li>Dredging and bulkheading may be required onsite</li> <li>Upstream bridge issues - site is located to the south (downstream) of all 4 problematic bridges</li> <li>No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>Nearest railway is located approximately 3/4 mile away</li> <li>No facilities onsite</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>Paved roads located onsite</li> </ul> | Site appears to be vacant/wooded lot<br>Site located within an industrial area |
|                   | 54.9                                       | 2                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>Dockage available at site</li> </ul>  | Site appears to be abandoned industrial storage lot                            |
|                   |  |                   |                                    |      |      |   |  |

Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW

| LOCATION | VISIBLE AVAILABLE LAND <sup>1</sup> (ACRE) | ZONE <sup>2</sup> | OPERATIONAL LOGISTICS <sup>3</sup> |      |      |   | CURRENT LAND USE <sup>1</sup>   |
|----------|--|-------------------|------------------------------------|------|------|---|---|
|          |  |                   | BARGE                              | RAIL | ROAD | LOGISTICAL COMMENTS   |   |
|          |  |                   |                                    |      |      | <ul style="list-style-type: none"> <li>• Site accessible to scows of all sizes</li> <li>• Adjacent channel depth is approximately -30 ft MLW</li> <li>• Shore appears to be bulkheaded</li> <li>• Shoreline depth appears to be approximately -10 ft MLW</li> <li>• Upstream bridge issues - site is located to the south of all 4 problematic bridges</li> <li>• No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>• Site is located over one mile from railway</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• Paved roads present onsite</li> <li>• Site is located 1.5 miles from major Interstate Highway ramps</li> </ul>  | <p>Many silos and ponds onsite</p> <p>Site is adjacent to wetland area</p>  |
|          | 25.1                                       | 2                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>• Appears to have dockage onsite</li> <li>• Adjacent channel depth is approximately -25 ft MLW</li> <li>• Scows of all sizes can access site, if shoreline is dredged</li> <li>• Shore appears tidal (Shoreline exposed at low tide)</li> <li>• Dredging and bulkheading may be required onsite</li> <li>• Upstream bridge issues - site is located to the south (downstream) of all 4 problematic bridges</li> <li>• No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>• Nearest railline is located 3/4 mile away</li> <li>• No facilities onsite</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• Paved roads located onsite</li> <li>• Approximately 2 miles from project site to major Interstate Highway</li> </ul> | <p>Site appears to be vacant/wooded lot</p> <p>Site located within an industrial area</p>   |
|          | 28.1                                       | 2                 | Yes                                | No   | Yes  | <b>Barge</b> <ul style="list-style-type: none"> <li>• Dockage is available at this site</li> <li>• Scows of all sizes able to access site</li> <li>• Adjacent channel depth is approximately -15 ft MLW</li> <li>• Shoreline depth is approximately -10 ft MLW</li> <li>• Upstream bridge issues - site is located to the south of all 4 problematic bridges</li> <li>• No downstream bridge issues for dredging</li> </ul> <b>Rail</b> <ul style="list-style-type: none"> <li>• Site is located more than five miles from the railway</li> </ul> <b>Road</b> <ul style="list-style-type: none"> <li>• Paved roads onsite</li> <li>• Site is located approximately 1/2 miles from highway</li> </ul>  | <p>Site appears to be a vacant industrial lot</p> <p>Several small buildings and dirt piles onsite</p> <p>Site is possibly an old sand &amp; gravel pit</p> |

**Table 1. LIST OF STAGING AND PROCESSING SITES AND ASSOCIATED TRANSPORTATION LOGISTICS REVIEW**

**Notes:**

*n/a* indicates “not applicable”

1. Aerial images were reviewed to establish “Visible Available Land” and “Current Land Use” for every site identified as a potential staging and/or processing area for the LPR Project. Where available, visual observations were recorded based on review of the 2006-aerial images, which however was available for areas covering the project area and its immediate vicinity only (approximately covering an area within 2-mile radius from the RM 3.4). Sites identified in other areas were reviewed using web-based satellite imagery search engines (e.g., MapQuest, Google Earth, etc.), which may not be all current for the years 2006 and/or 2007.
2. Zone 1 includes sites located within a 5-mile radius from the Project Site and Zone 2 includes all properties identified outside of this 5 mile radius and generally extending to an approximate distance of 15 miles or more.
3. Notes on Operational Logistics

- Barges and Scows: A survey of equipment used by various dredging operations was conducted, and average sizes of equipment available for this type of application were identified. For the Transportation Evaluation presented above, the following equipment dimensions were assumed:

| Vessel         | Draft  | Width  | Length   | Height | Capacity       |
|----------------|--------|--------|----------|--------|----------------|
| Large Scow     | 12-14' | 38-52' | 180-260' | 16-20' | 2,000-3,000 cy |
| Small Scow     | 15-17' | 35-40' | 100-150' | 12-15' | 600-1,000 cy   |
| Large Tug      | 10-12' | 27-30' | 90-110'  | 27-35' |                |
| Small Push Tug | 4-6'   | 10-15' | 20-35'   | 17-20' |                |

- Water depth information for the River was obtained from reviews of bathymetric data summarized by The Louis Berger Group, Inc. (LBG) and Malcolm Pirnie, Inc. (MPI), and from publicly available NOAA charts and maps of the area.
- Bulkhead and pier information was obtained through visual review of available aerial photographs of the area. Onsite inspections were not conducted as part of this assessment. Bridge height, width, and opening information were obtained from MPI and other available public sources.
- Rail: A review of rail facilities in and around the work areas was conducted utilizing information compiled by LBG, MPI, and other publicly available data sources, including internet searches, NOAA charts, and aerial photographs. Onsite inspections were not conducted as part of this assessment. Considerations included: Rail onsite or not; does spur exist; does load-out facility exist; name of rail carrier; how close is closest rail. Note that the assessment does not distinguish between Amtrak rail and Conrail systems. Amtrak rails may not be viable rail option at this time due to significant logistics issues associated with mixing freight and passenger service. Notations concerning Amtrak in the comments section of the table were carried through for further evaluation.
- Road: A review of roadways in the vicinity of the work areas was conducted utilizing publicly available aerial photographic information, street maps, and information compiled by LBG and MPI. Onsite inspections were not conducted as part of this assessment. Considerations included: onsite/adjacent-to-site roadways or not, type of roads (side road, industrial roadway, residential street, etc.), condition of roadways, on-ramps and off-ramps for highways and main roads, proximity to major highways, and likely routes (particularly if through residential areas).
- Specific Bridge Considerations: Five of the bridges that exist on the Passaic River within the overall logistics assessment area for the project have issues that require consideration. These include:
  - Conrail Bridge, Raritan, N.J. is a swing bridge with only 125 ft of horizontal clearance and 8 ft of vertical clearance when closed. This bridge will need to be opened for virtually all of the equipment likely to be used for this project except for the smallest support vessels. The bridge appears to be manned, and will open on signal (as long as a train is not approaching).
  - Central Railroad of N.J. Bridge, Passaic, N.J. is (was) a swing bridge with 100 ft of horizontal clearance. It appears that the center swing portion of the bridge has been removed when the bridge was abandoned, so height is no longer an issue with this bridge. This (former) bridge represents one of the narrower constructions for marine equipment within the project area, and will need to be considered when planning and sizing scow, barge, and tug floatation patterns.
  - Point-No-Point Conrail Freight Bridge, Passaic, N.J. is a swing bridge with 103 ft of horizontal clearance and 16 ft of vertical clearance when closed. This bridge will need to be opened for virtually all of the equipment likely to be used for this project except for the smallest support vessels. The bridge appears to NOT be manned except when needed, and requires 4-hour notice prior to opening.
  - Jackson Street Bridge, Passaic, N.J. is a swing bridge with 75 ft of horizontal clearance and 15 ft of vertical clearance when closed. As the lowest bridge in the potential work area, this bridge will need to be opened for virtually all of the equipment likely to be used for this project except for the smallest support vessels. The bridge appears to NOT be manned except when needed, and requires 4-hour notice prior to opening.
  - Northeast Corridor Amtrak Bridge, Passaic, N.J. is a lift bridge with 200 ft of horizontal clearance and 24 ft of vertical clearance when closed. This bridge will need to be opened when tall equipments (such as large tugs) are utilized. The bridge appears to NOT be manned except when needed, and requires 4-hour notice prior to opening.

In general, the bridges within the work area that will require the most significant amount of consideration and coordination are those which are less than 24 ft in height when closed and require 4-hour notification for opening. These include the Conrail Bridge in Raritan, the Point-No-Point Conrail Bridge in Passaic, and the Jackson Street Bridge in Passaic.



**Table 1**  
**Summary of Potential Placement/Processing Sites by Acreage**

| <b>Sites</b>                 |               | <b>Access</b>     |             |             |
|------------------------------|---------------|-------------------|-------------|-------------|
| <i>Area<br/>(land acres)</i> | <i>Number</i> | <i>Waterfront</i> | <i>Rail</i> | <i>Road</i> |
| <10                          | 18            | 13                | 3           | 16          |
| 10 - 20                      | 17            | 11                | 6           | 17          |
| 20 - 30                      | 17            | 9                 | 7           | 16          |
| 30 - 50                      | 16            | 9                 | 5           | 13          |
| 50 - 100                     | 6             | 4                 | 1           | 6           |
| 100 - 200                    | 11            | 10                | 7           | 9           |
| >200                         | 2             | 2                 | 1           | 2           |
| Total                        | 87            | 58                | 30          | 79          |

**Table 2**  
**Summary of Potential Placement/Processing Sites with Waterfront Access**

| <b>Sites</b>                             |               | <b>Access</b>     |             |             |
|--|---------------|-------------------|-------------|-------------|
| <i>Distance*</i><br><i>(river miles)</i> | <i>Number</i> | <i>Waterfront</i> | <i>Rail</i> | <i>Road</i> |
| <2                                       | 14            | 14                | 2           | 13          |
| 2 - 5                                    | 15            | 15                | 2           | 15          |
| 5 - 10                                   | 11            | 11                | 4           | 10          |
| >10                                      | 18            | 18                | 8           | 17          |
| Total                                    | 58            | 58                | 16          | 55          |

\* From Diamond Alkali Site, RM 3.4